Department of Education Title III, Part F Awardees

Moderated by:
Dr. Frank A. Gomez
Executive Director, STEM-NET
Office of the Chancellor

STEM-NET

https://www2.calstate.edu/impact-of-the-csu/research/stem-net

Speakers

Stacey Slijepcevic, Department of Education
U.S. Department of Education Funding Opportunities

Guillermo Escalante, Cal State San Bernardino
Proactive Approaches to Training Hispanics in STEM

Iqbal Atwal & Harold Stanislaw, CSU Stanislaus
Supporting Student Immersion into STEM Through Implementation of High-Impact and Student-Centered Programming at Stanislaus State

Megan Drangstveit, Cal State Fullerton
CSUF's Project RAISE – a Regional Alliance in STEM Education Focused on STEM Transfer Student Success

Lynn Tashiro, Sacramento State
STEM4Equity at Sacramento State

SUPPORTING
HISPANIC STUDENT SUCCESS
IN HIGHER EDUCATION

Dr. Stacey Slijepcevic (Slee-Yep-Cha-Vitch)
HSI Division Director

Office of Postsecondary Education
February 7, 2024

Office of Postsecondary Education

Higher Education Programs

Institutional Service

- **Strengthening Institutions**
- **Historically Black Colleges and Universities**
- **Hispanic-Serving Institutions**
- **Fund for the Improvement of Postsecondary Education**

Student Service

- **TRIO**
- **GEAR UP**
- **GAANN**
- **Other Access and Scholarship Programs**

Typical Grant Cycle

Developing Hispanic-Serving Institutions (DHSI)- Title V, Part A
https://www2.ed.gov/programs/idueshsi/index.html

Promoting Postbaccalaureate Opportunities for Hispanic Americans (PPOHA)-Title V, Part B
https://www2.ed.gov/programs/ppoha/index.html

Hispanic-Serving Institutions STEM and Articulation Program (HSI STEM), Title III, Part F
https://www2.ed.gov/programs/hsistem/index.html

Supporting Hispanic-Serving Institutions

FY 2024 Appropriations

❑DHSI program (Title V, Part A) – $TBD

❑PPOHA program (Title V, Part B) – $TBD

❑HSI STEM program (Title III, Part F) – $TBD

❑FIPSE Open Textbooks Pilot Program – $12M*

❑FIPSE Transitioning Gang-Involved Youth Program - $5M*

❑FIPSE Modeling and Simulation Program - $8M*

❑FIPSE Rural Postsecondary Education and Economic Development Program - $45M*

❑FIPSE Postsecondary Student Success Program - $45M*

❑FIPSE MSI Research and Development Planning and Implementation Grant Program - $50M*

FIPSE is the Fund for the Improvement of Postsecondary Education
FY23 FIPSE Appropriations

HSI Allowable Activities

(refer to program statute for specific allowables)

- Faculty and staff development
- Curriculum revision, expansion, and development
- Purchase of equipment
- Improve instructional facilities (construction, maintenance, and renovation
- Purchase educational materials
- Tutoring, counseling, and other student service programs
- Strengthen administrative and funds management systems
- Expanding Hispanic and underrepresented graduate and professional students served by expanding courses and resources

- Establish or improve a development office to strengthen private contributions
- Creating or improving facilities for internet or other distance education technologies
- Teacher education programs
- Community outreach programs
- **Endowment fund**
- Community outreach programs to encourage elementary and secondary school students to pursue postsecondary education
- Other proposed activities that are approved to carry out the purposes of title

Using HSI Grants to Support Students and the Institution

Academic Quality

- Faculty development
- Curriculum development
- Improvement of basic skills courses
- Acquisition of library materials and laboratory equipment

Student Services

- Counseling
- Tutoring and mentoring
- Establishing learning communities
- Improving student facilities and computer labs

Student Outcomes

- Improving student retention and graduation rates
- Increasing academic achievement

Fiscal Stability

- Establishing or improving a development office
- Strengthening Alumni relationships and fundraising
- Building an endowment
- Increase research dollars

Institutional Management

- Creating and maintaining Management Information Systems
- Training and developing staff other than teaching faculty
- Construction and renovation
- Improving the infrastructure for internet access

Eligibility Designation Process

IHEs submit their application for designation as an eligible institution or application for a waiver via the HEPIS system at https://hepis.ed.gov/.

To check your institution's eligibility in the system, log into HEPIS, and then click "View Pre-Eligibility Information" button:

- ❑ If your IHE meets the "needy student" and "core expenses" requirements, you will be able to view and print your eligibility letter
- ❑ If your IHE does not meet the "needy student" and/or "core expenses" requirements, you will be able to submit an application and/or apply for a waiver
- ❑ You will need to know your IHE's OPE ID number in order to apply.

ED Secretary's Priorities

These are the Secretary's Final Priorities:

o Addressing the Impact of COVID-19 on Students and Educators.

o Promoting Equity in Student Access to Educational Resources, Opportunities, and Welcoming Environments.

o Supporting a Diverse Educator Workforce and Professional Growth to Strengthen Student Learning.

o Meeting Student Social, Emotional, and Academic Needs.

o Increasing Postsecondary Education Access, Affordability, Completion, and Post-Enrollment Success.

o Strengthening Cross-Agency Coordination and Community Engagement to Advance Systemic Change.

Preparing Your Grant Application

➤ Use **analysis** and evaluation to identify institutional challenges or issues, focusing on the most well-analyzed challenges or issues that confront your IHE

➤ Consider addressing challenges or issues that your institution will have to resolve regardless of grant funding

➤ Dedicate time & effort to the **Comprehensive Development Plan (CDP)** selection criterion, which is the heart of the application, as well as the **Project Services** selection criterion. Focus on strengthening your <u>academic programs</u>, as well as your <u>financial management</u> and <u>fiscal stability</u>, in addition to <u>physical & virtual infrastructure</u>, for lasting change

Preparing Your Grant Application

➢Identify **goals** for your proposed project, especially how they will focus on Hispanic student academic and career success

➢Analyze every proposed **activity** to ensure that it is attainable, meaningful, and measurable

➢Choose **metrics** and **evaluation** methods that will produce evidence about the project's effectiveness

➢Use Government Performance and Results Act (GPRA) program **performance measures** to build your project assessments

Preparing Your Grant Application

➢ Design your project with a strong **internal controls** systems, including frequent monitoring and a sound financial management plan

➢ Have in place or plan to hire **well-qualified and experienced key personnel** (especially the Project Director, Project Manager or Activities Director, and Evaluator)

➢ Emphasize how your project, if funded, will make lasting change at your IHE by thoughtfully incorporating strategies for **institutionalization** of project impacts

➢ Ensure that your project narrative is **well-documented and researched**; include citations/references, where appropriate, and use the highest level of evidence that makes sense for your project

WWC Produces Handbooks for Use in Selecting Interventions and Developing Grant Projects

Practice Guides presents recommendations for educators to address challenges in their classrooms and schools. They are based on reviews of research, the experiences of practitioners, and the expert opinions of a panel of nationally recognized experts.

Designing and Delivering Career Pathways at Community Colleges

Using Student Achievement Data to Support Instructional Decision Making

Using Technology to Support Postsecondary Student Learning

Encouraging Girls in Math and Science

THIS IS YOUR MAIN SOURCE OF EVALUATION AND EVIDENCE INFORMATION RELATED TO YOUR ED-FUNDED GRANTS.

Link is here: www.ies.ed.gov/ncee/wwc/

HSI Division Newsletter

Hispanic-Serving Institutions (HSI) Division

Dr. Stacey Slijepcevic, Division Director
- Stacey.Slijepcevic@ed.gov

Kurrinn Abrams, Open Textbooks & Rural Postsecondary Education Program Lead
- Kurrin.Abrams@ed.gov **202-453-7906**

Njeri Clark, DHSI & Basic Needs Program Lead
- Njeri.Clark@ed.gov **202-453-6224**

Jymece Seward, HSI STEM & Transitioning Gang-Involved Youth Program Lead
- Jymece.Seward@ed.gov **202-453-6138**

Dr. Robin Dabney, Modeling & Simulation Program Lead
- Robin.Dabney@ed.gov **202-453-7908**

Rick Gaona
- Richard.Gaona@ed.gov **202-453-6077**

Margarita Melendez, PPOHA & EAI Program Lead
- Margarita.Melendez@ed.gov **202-260-3548**

# Proactive Approaches to Training Hispanics in STEM (PATHS)

Guillermo Escalante, DSc, MBA, ATC, CSCS*D, FISSN
California State University, San Bernardino

Collaborators: *Sastry Pantula, PhD; David Maynard, PhD; Carol Hood, PhD; Khalil Dajani, PhD*

Guillermo Escalante, Assistant Dean & Professor

CSU San Bernardino, College of Natural Sciences

gescalan@csusb.edu

Project Overview

- U.S. Department of Education Title III Hispanic-Serving Institution STEM Articulation Initiative

- Funded beginning in October2021

- Five-year grant

- Grant year runs from October 1 – September 30

- Year 2 ended September 30, 2023

Year 1	Year 2	Year 3	Year 4	Year 5
2021	2022	2023	2024	2025	2026

CALIFORNIA STATE UNIVERSITY
SAN BERNARDINO
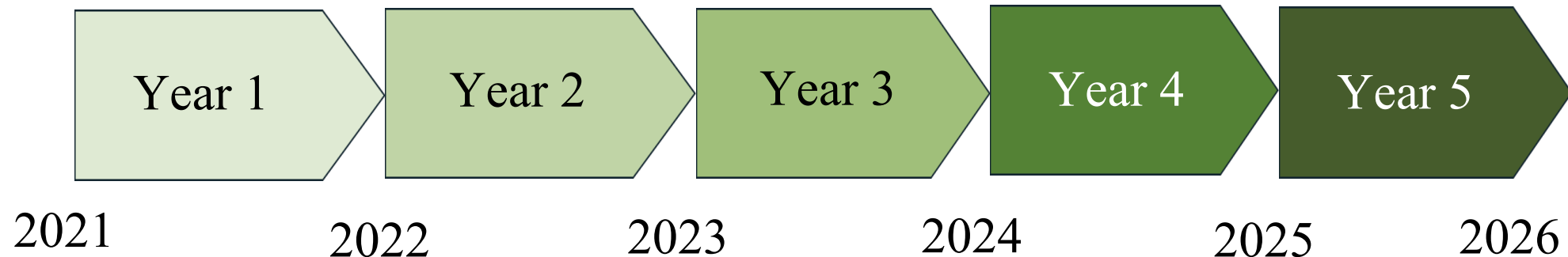
Project Goals

1. **Increase the number of Hispanic and other low-income students attaining degrees in the STEM fields**

2. **Develop model transfer and articulation agreements between two-year HSIs and four- year institutions in STEM fields**

3. **Evaluate part of the program with an experimental or quasi-experimental design** ◄ **Test of IDP intervention**

4. **Providing work-based learning experiences and improving collaboration between education providers and employers**

5. **Develop or enhance tutoring, counseling, and student service programs designed to improve academic success** ◄ **Science Success Center**

CALIFORNIA STATE UNIVERSITY
SAN BERNARDINO

Grant Activities

Activity 1: Facilitate Transitions from Community Colleges (CCs)

Activity 2: Create Alternative Degrees

Activity 3: Provide Post-COVID-19 Counseling

Science Success Center → Activity 4: Create a Science Success Center

Activity 5: Create a Faculty Learning Community (FLC)

Activity 6: Increase the Availability of Learning Assistants (LAs)

Activity 7: Provide Hispanic Role Models and Mentors

IDP's → Activity 8: Goal-Setting Support: Provide Mentoring with Individual Development Plans

Activity 9: Provide Undergraduate Research Experiences

Activity 10: Create Partnerships with Aerospace and Defense Companies

Activity 11: Support Student Memberships in Professional Societies

Science Success Center

- Serves as a one-stop shop where students can address problems, seize opportunities, find resources, and connect with other campus organizations.
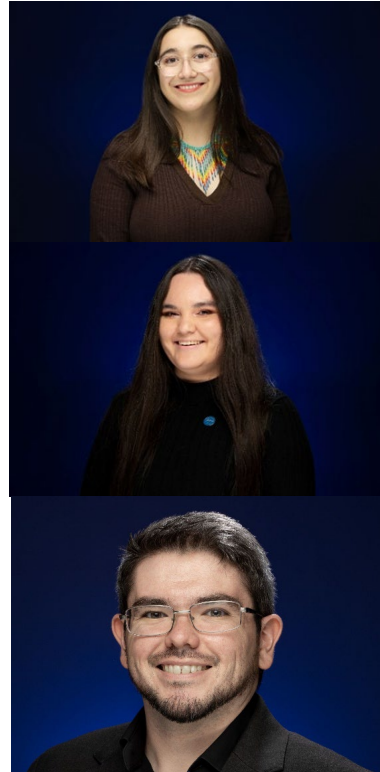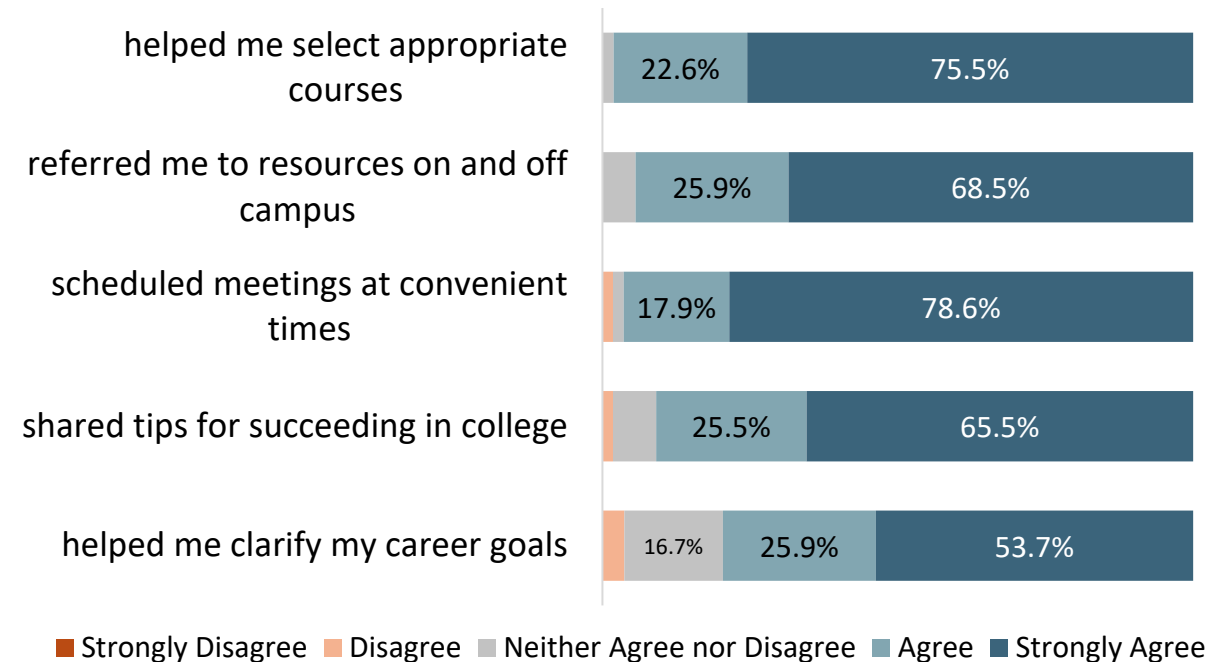
SSC Services Beyond Advising

- SOAR session student recruitment
- New Science Success Center Student Orientation/Bridge Event
- Career Panels and Workshops (All CNS)
- Collaborative workshops with other centers (i.e., Career Center)
- Open house, finals study marathons, and social events (All CNS)
- Science Buddies and Science Buddy Social Events
- Science Success Center Student Graduation Ceremony
- Biology and Math tutoring
- STEM Gym (All CNS)
- Community college visits and open house
- IDPs and IDP modifications
- Develop incoming transfer student mycaps (STEM)
- Myer's Briggs and Strong Evaluations

CALIFORNIA STATE UNIVERSITY
SAN BERNARDINO

Results

Minimal evaluation findings due to early stage of grant implementation

- Cohort 6 students entered the program with a strong sense of belonging, leaving little room for improvement. However, they significantly increased their knowledge of campus resources.

- SSC cohort students valued the support they received from the program. Some supports, including the Science Buddies program and complimentary SACNAS membership, were not used by all students.

- Students found the SSC Counselors helpful

	Neither Agree nor Disagree	Agree	Strongly Agree
helped me select appropriate courses		22.6%	75.5%
referred me to resources on and off campus		25.9%	68.5%
scheduled meetings at convenient times		17.9%	78.6%
shared tips for succeeding in college		25.5%	65.5%
helped me clarify my career goals	16.7%	25.9%	53.7%

■ Strongly Disagree ■ Disagree ■ Neither Agree nor Disagree ■ Agree ■ Strongly Agree

25

CALIFORNIA STATE UNIVERSITY
SAN BERNARDINO

Results

Students appreciated the support from the Counselors

"I really appreciate my counselor. As a transfer student, I would be completely lost without them. I am grateful to have someone that I can reach out to and knows me by name."

-Cohort 7 Student

"The center helped me navigate through my first year of college and is a great experience and help system for students."

-Cohort 7 Student

"[The SSC is] a great environment for students to come and study. I see each student have a great connection with their advisors... the advisors are understanding and flexible with our schedules."

-Cohort 7 Student

CALIFORNIA STATE UNIVERSITY
SAN BERNARDINO

Lessons Learned

- Differentiation of SSC resources and services to other university resources and services

- Recruitment challenges

- Under-utilization of Science Buddies

- Under-utilization of free student professional memberships

- Lack of attendance at events

- Initial communication challenges

- Students value their counselors

CALIFORNIA STATE UNIVERSITY
SAN BERNARDINO

Next Steps/Long-Term Plans

- Restructuring Science Buddy Program

- New recruitment and orientation strategies

- Disassociation of SSC orientation and summer bridge program

- Better advertising of events

- More student input on ideas for future events

- Better education on benefits of professional memberships

CALIFORNIA STATE UNIVERSITY
SAN BERNARDINO

Questions?

Contact Information

Name: Guillermo Escalante

Campus/Department: CSUSB College of Natural Sciences

Website*: csusb.edu*

Phone #: *909- 537-3310*

Email: gescalan@csusb.edu

Follow us:
@csusbnaturalsciences
@csusbssc

Supporting Student Immersion into STEM through High-Impact, Student-Centered Programming at Stanislaus State

Iqbal Atwal, MPA – California State University, Stanislaus

Harold Stanislaw, PhD – California State University, Stanislaus

Project Overview

- Title III Part F grants aim to increase STEM degree completions in historically underrepresented groups

- Early work asked why more students don't graduate in STEM

STEM freshmen are more likely to *switch* out than *drop* out

Most losses from STEM happen in the first two years

Half of all STEM majors switch to a non-STEM major
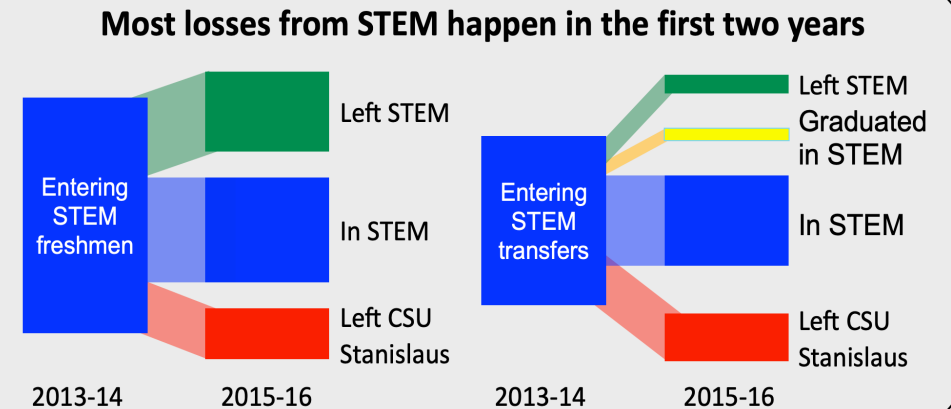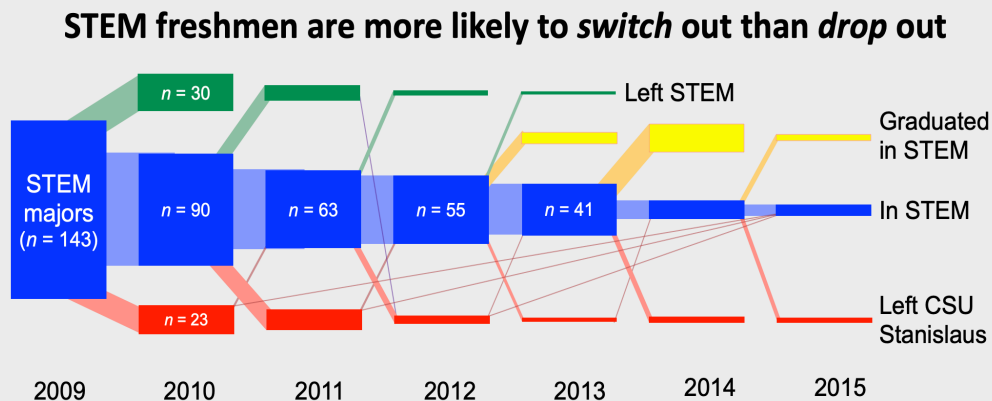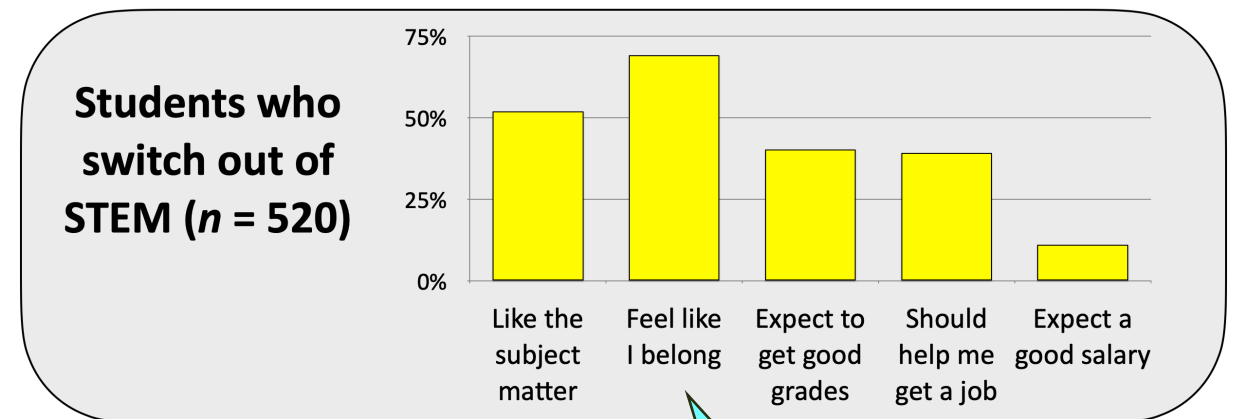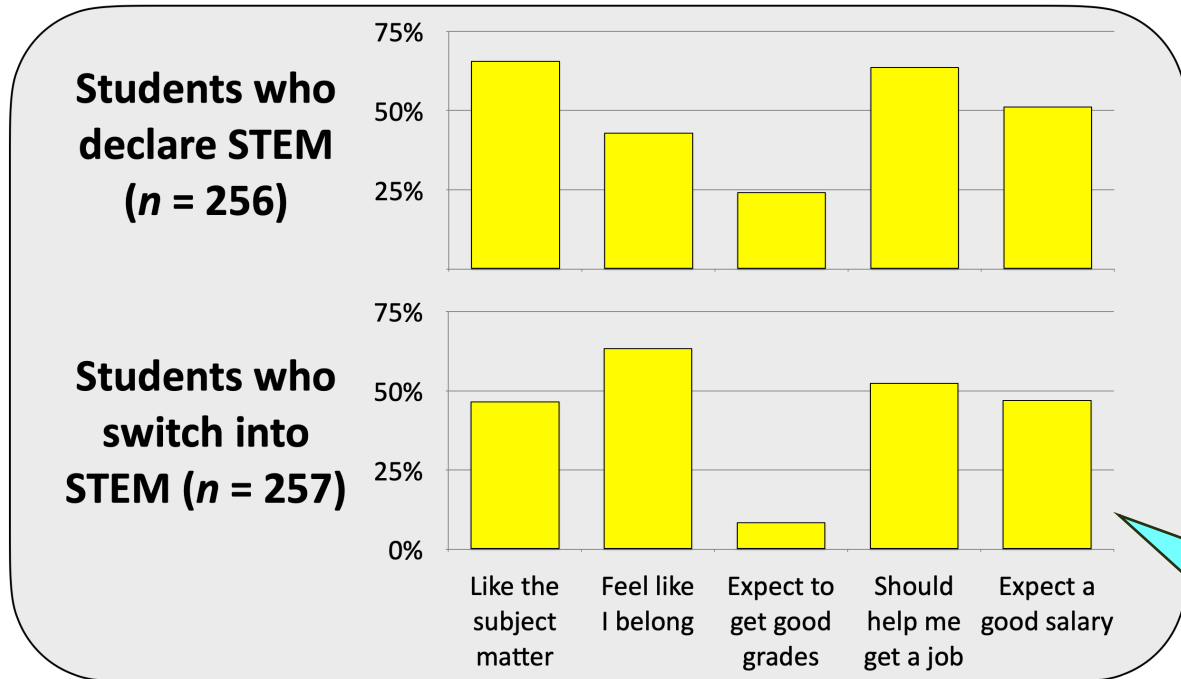
Project Overview

- **ASPIRE**: **A**ccelerated **S**TEM **P**athways through **I**nternships, **R**esearch, and **E**ngagement
  - **STEM PALS**: **STEM P**eer **A**ssisted **L**earning for **S**tudents
  - **SMART**: **S**cience and **M**ath **A**rticulation and **R**esearch for **T**ransfers
  - **STEM CRU**: **STEM C**areer **R**eady **U**
- Focus is on career preparation and helping students build a sense of belonging in their first 2 years on campus

STEM PALS

- 2-week summer STEM academy for incoming STEM freshmen

- Activities focus on STEM, key resources, and psychosocial factors

CALIFORNIA STATE UNIVERSITY
Stanislaus

STEM PALS

WALK-IN TUTORING

ASPIRE | STEM PALS
STEM Peer Assisted Learning for Students

STEM PALS Tutors are here to help with individual and group tutoring. No appointment needed!

HUSSEIN MAATOUK
THURSDAYS
4 PM – 7 PM

ADERSIN VARTANYAN
WEDNESDAYS
4 PM – 7 PM

ROYDEN LAIA
MONDAYS
4 PM – 7 PM

ALLY WATKINS
TUESDAYS
4 PM – 7 PM

ANOOP SANGHERA
MON & THU
4 PM – 7 PM

JASMIN DOMINGUEZ CERVANTES
TUE & WD
4 PM – 7 PM

TUTORING AVAILABLE AT N124 (THE COMMONS)

SPRING 2023

For inquiries, contact us:
aspire@csustan.edu

Visit our website!
https://www.csustan.edu/aspire

WALK-IN TUTORING
SPRING 2023

ASPIRE
Accelerated STEM Pathways Through Internships, Research, and Engagement

Monday:

CHEM	BIOL	MBIO
3010	1010	3010
	1050	3032
	1150	
	3310	
	3350	

Tuesday:

BIOL	MATH	CHEM
1010	1070	1100
1050	1071	1110
1150	1072	1112
3310	1080	3010
3680		4400
4100	**MBIO**	
BOTY	3010,	
3700	3032, 4300	

Wednesday

BIOL	CHEM	MBIO	MATH
1010	1100	1102 → 3010	1000
1050	1110	1112 → 3032	1030
1150	2100	3010	1035
3100	3012	3020 **PHYS**	1036
3310	3022	3070 → 2100	1040
3350	4400	**ZOOL**	1070
3680		4280	1071
4400			1072

Thursday:

BIOL	CHEM	MBIO
1010	1100	3010
1050	3010	3032
1150	4400	
3310		
3350		

4-7pm The Commons (N 124)

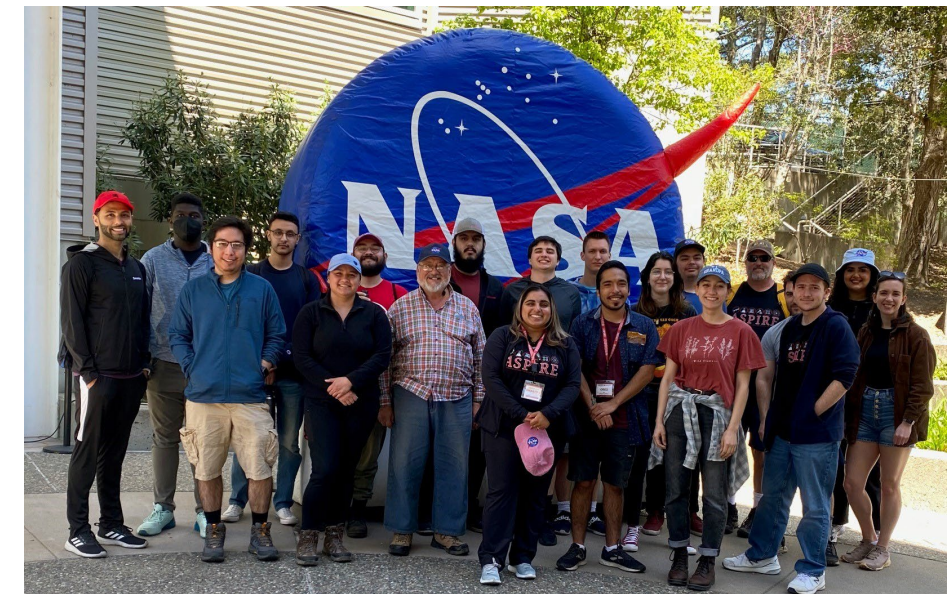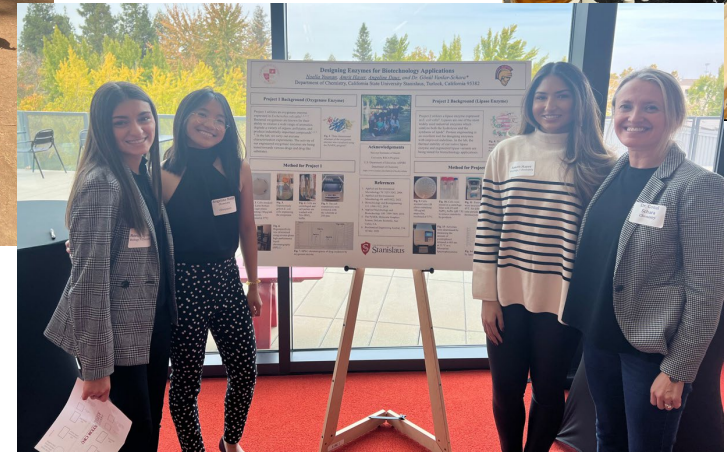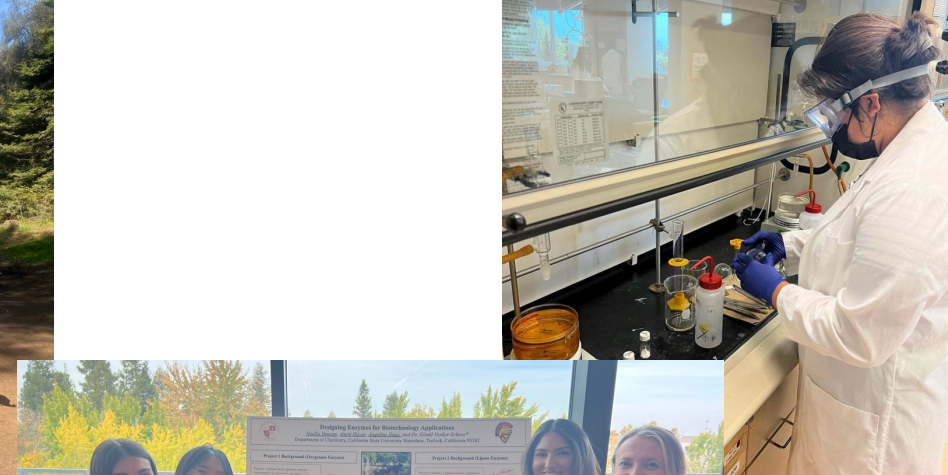For inquiries, contact us:
aspire@csustan.edu

SMART

- Work with students at community colleges
  - Major-specific articulation roadmaps and direct 1:1 advising
  - Tabling and transfer fairs, events, and workshops
- Dedicated transfer peer mentors
- Assigned STEM faculty advisor before new student orientation
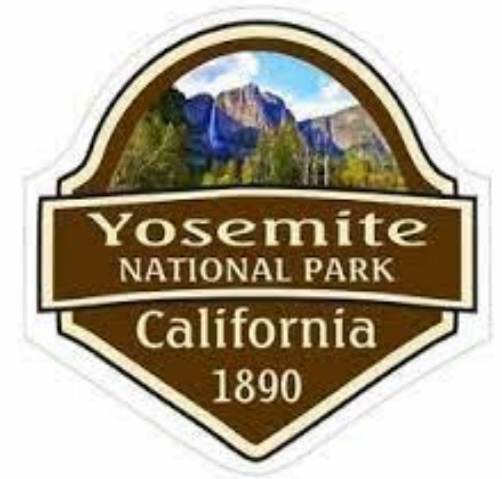- Annual transfer summit

STEM CRU

- Hands-on internship experience
  - Faculty mentor
  - Lab supplies
  - Professional society membership

- Workshops and trainings
  - Monthly meetings
  - Résumé workshop
  - LinkedIn Learning and Grow with Google
  - Reverse Career Fair
  - Peer mentors and career coach

STEM CRU

CALIFORNIA STATE UNIVERSITY
Stanislaus

Modesto Irrigation District
MID
The Power to Grow

Yosemite NATIONAL PARK
California
1890

U.S. FISH & WILDLIFE SERVICE
DEPARTMENT OF THE INTERIOR
San Luis
National Wildlife Refuge Complex

NASA

CITY OF TURLOCK INC. 1908

HilmaR CHEESE COMPANY

E&J. Gallo Winery

BAY VALLEY TECH
www.bayvalleytech.com

TID
WATER & POWER
Serving Central California since 1887

Results

- Participating students leave STEM **half as often** as non-participating, comparison students

First-time Freshmen Remaining in STEM

STEM summer academy students

Comparison students

Matricu-lation | End of 1st year | End of 2nd year
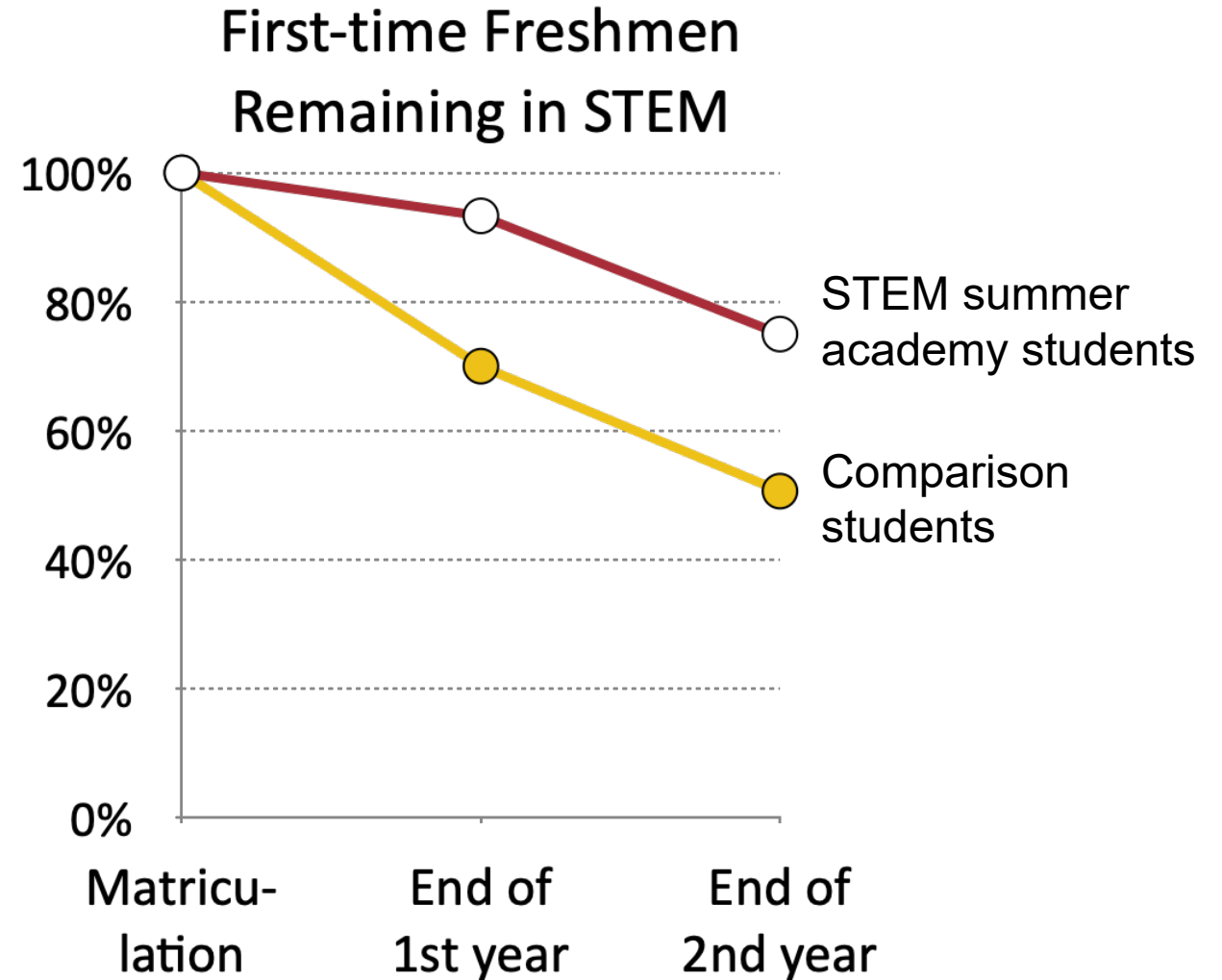
Lessons Learned

- Peer mentors are essential to success

- STEM PALS
  - Residential programs aren't needed
  - Some activities work better virtually than in person

- SMART
  - Connecting CSU faculty to their community college colleagues is highly rewarding
  - Maintaining major-specific roadmaps is challenging

- STEM CRU
  - Faculty may need convincing to place freshmen in their labs
    … but ultimately find the experience

Funding tips

- Gather data early and often to identify needs
  - Budget for a research analyst
- Recruit campus allies who share your vision and commitment
- Present your work and learn from others

42nd Annual Conference on the First-Year Experience
LOS ANGELES, CALIFORNIA
FEBRUARY 3-6, 2023
NATIONAL RESOURCE CENTER

WASC | Senior College and University Commission
ARC 2023
THE CHALLENGE OF EXCELLENCE: REALIZING THE NEW STAND

AHSIE
Alliance of Hispanic Serving Institution Educators

AAC&U and Project Kaleidoscope present
Transforming STEM Higher Education Conference
November 2–4, 2023 | Arlington, VA

Contact us!

Iqbal Atwal

ASPIRE Director

iatwal@csustan.edu
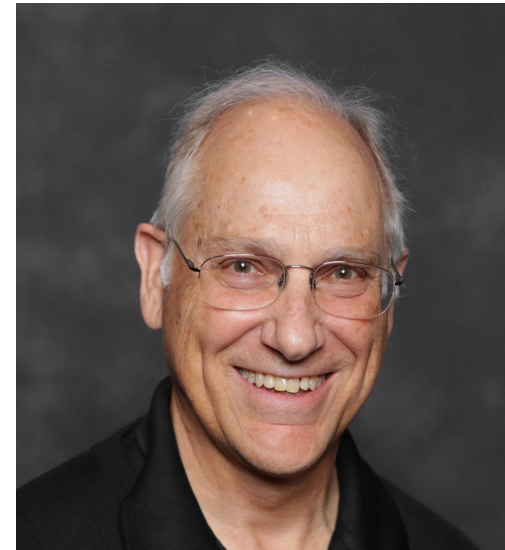
Harold Stanislaw

Professor of Psychology and ASPIRE Evaluator

hstanislaw@csustan.edu

https://www.csustan.edu/aspire

CSUF's Project RAISE – a Regional Alliance in STEM Education Focused on STEM Transfer Student Success

Megan L. Drangstveit, Ph.D.
California State University, Fullerton

Dr. Megan L. Drangstveit, Principal Investigator

California State University, Fullerton

megand@fullerton.edu

Project Overview

- CSUF has a strong history of utilizing grants to focus on STEM transfer student success

- Project RAISE integrates a variety of services and project components to increase the number of Hispanic and low-income STEM transfer students and increase persistence, retention, and graduation rates among participants

- Project RAISE partners:

  - Community Colleges: Citrus, Cypress, Fullerton, Golden West, Irvine Valley, Orange Coast, Saddleback, Santa Ana, Santiago Canyon

  - CSUF Colleges: Natural Sciences & Mathematics, Engineering & Computer Science

  - CSUF: Career Center, college-based academic advisors

  - External Evaluator: Arroyo Research Services

Activities & Results

Peer Advisors

- 1:1 mentoring for research and transfer programs; lead workshops and activities at CCs and CSUF; primarily products of the program(s) / STEM transfer students

- **Result:** built connections with students, provided support and referrals to campus resources, increased self-efficacy and skills with leadership, communication, confidence

Community college outreach activities

- Workshops focused on careers in STEM, undergraduate research, transfer success, transfer fairs, CC visits to CSUF with lab tours

- **Result:** connected with community college students and counselors; students expanded understanding of transfer and career options; showcased CSUF as transfer institution; recruited students for research and transfer programs; exposed students to university research and support settings

45

Activities & Results

Undergraduate Research Experience

- 8 weeks at CSUF for 36+ CC students each summer, individual project, research poster, summer symposium, assigned Peer Advisor, $5,000 participant stipend, $1,500 faculty research supplies

- **Result:** 2022 (36); 2023 (39); CSUF has adopted URE model for campus-wide student research program; several proposals submitted by CSUF faculty to partner with Project RAISE (NSF, NASA)
    - Y1 & Y2: Participants increased confidence in STEM pursuits, substantial skill development (per faculty and lab mentors), and increased sense of belonging in STEM (92%); 100% of participants reported developing soft skills; considering graduate degrees in STEM (87%), industry (69%), and research (58%)
    - 93% of Y2 URE faculty (n=16) reported that students met their expectations for undergraduate researchers; were pleased with student work and work products
    - 71% of Y2 URE faculty reported plans to publish the results of their Y2 (2023) URE-supported research, up from 50% in Y1

Cal State Fullerton — PROJECT RAISE

Activities & Results

RAISE Transfer Program

- Transition program for STEM transfers at CSUF – academic, social, and skills workshops, Transfer Resource Center, assigned Peer Advisor, priority registration

- **Result:** students completed required activities aligned with student persistence and success, higher rates of students in good standing vs non-participants, participants credit program for persistence and success

  - RTP participants primarily seeking STEM industry (73%) vs graduate degree (45%) or research (37%)
  - Increase in the percentage of HLI transfer students graduating with a STEM degree within four years of enrollment at CSUF: 62.5% F16 cohort; 71.7% F18 cohort
  - Increase the percentage of HLI STEM degree-seeking transfer students on track to complete a STEM degree within three years of their transfer date: baseline F19 – 53% on track; F21 59% on track

![Cal State Fullerton Project RAISE logo]

Activities & Results

Internship Preparation Program

- Assist RTP students in preparing for, pursuing, and participating in paid internships; workshops and 1:1 support; 1-day bootcamp in summer

- **Result:** students are developing fundamental skills related to internships
  - 94% of bootcamp participants learned to seek career and/or academic help when needed
  - 88% reported learning to better search for companies and other opportunities in their field
  - 88% learned how to modify a resume and/or cover letter to reflect the language and style of their target job or industry

Research Preparation Program

- Assist RTP students in preparing for, pursuing, and participating in research opportunities locally and nationally; workshops and 1:1 support; collaboration with CSUF research programs and resources

- **Result:** led discussions with CSUF research programs for collaboration

48

Activities & Results

**Collaborative Articulation for Transfer Success (CATS)**

- Sustainable transfer student success through the improvement of institutional partnerships; adopt campus-specific STEM articulation strengthening plans; develop and adopt model STEM transfer and articulation agreements

- **Result:** All 9 partner CCs have engaged in CATS
  - Y1: white paper, initial joint meeting, institutional planning survey / articulation readiness rubric and CATS project planners
  - Y2: institutional data shared/analyzed; individual college meetings; campus-specific project planners refined and updated
  - Y3: Campus Action Plans developed - projects identified; cluster, individual, and group meetings

Lessons Learned

- Expect the unexpected – planning and double checking go a long way

- Undergraduate research programs are highly impactful, our program is especially supportive
  - Set performance expectations for all URE roles as early as possible

- Finding creative ways to expand the network of engaged employers who can offer students a STEM internship experience would boost the value of RTP/IPP participation

- Hybrid offerings are here to stay; the use of multiple platforms and outreach channels to share information about RAISE and campus-wide activities/resources with students has been effective

- Mentoring – students appreciate a point of contact to make CSUF feel smaller

- Student staff *are* the program – helpful to be able to recruit from participants

- Use feedback, constantly refine – assess everything, meet regularly with evaluation team

Cal State Fullerton PROJECT **RAISE**

Next Steps/Long-Term Plans

- Continue to utilize multiple modalities for engaging with participants: recorded content, planned virtual, and in-person activities for grater participant flexibility

- Expanding partnership with CSUF research programs and colleges to co-promote opportunities, engage with students

- Progress with CATS activities – all 9 colleges completing projects

- Collaborate with CSUF faculty and external partners on additional funding opportunities
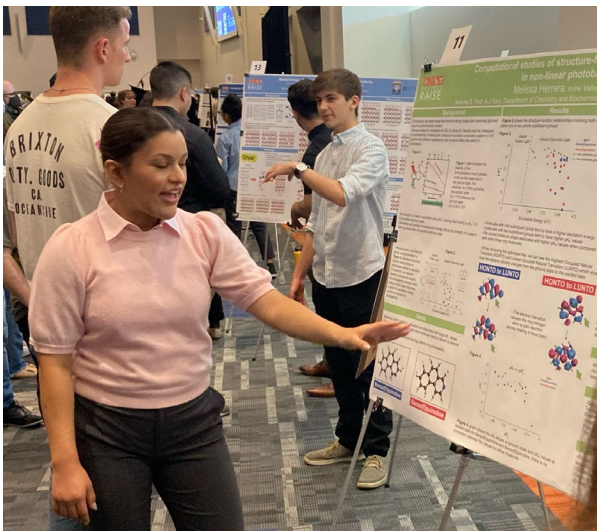
Summary

- Our program is excelling in the following areas:
  - Leading STEM transfer support efforts at CSUF
  - Providing information about STEM careers, transfer, and research to community college and CSUF students
  - Supporting STEM transfer students prior to and after transfer, and through research and internship experiences
  - Considered valuable by participants, and as a primary source of support/motivation for student success
  - Fostering connections between partner community colleges
  - Utilizing assessment to refine activities to best support students and grant objectives

Cal State Fullerton — Project RAISE

Questions?

Contact Information:

Megan L. Drangstveit, Ph.D.

CSUF Project RAISE

www.fullerton.edu/raise

657-278-4601

megand@fullerton.edu

FOLLOW US ON SOCIAL MEDIA TO STAY UPDATED ON OUR PROGRAMS & EVENTS!

@csufprojectraise

STEM4Equity at Sacramento State

Lynn M. Tashiro, Professor of Physics, Director of the Center for Teaching and Learning

Jennifer Lundmark, Professor of Biology

Redefine the Possible™

STEM4Equity Project Overview

- Hispanic Serving Institution (HSI) STEM goals
  - o Increase STEM majors and degrees
  - o Gateway courses and Transfer Students
  - o Improving outcomes for Hispanic and Pell Eligible Students
- Project Activities
  - o Course redesign and Faculty Learning Communities for equity and integration of workplace skills
  - o Peer Assisted Learning (PAL)
  - o STEM micro internships
  - o Research: Measurement of the impact on student success

CENTER FOR TEACHING & LEARNING
SACRAMENTO STATE

SACRAMENTO STATE

Course Redesign

- ## Core Courses:
  - Physics 11A Mechanics
  - Math 30 Differential Calculus
  - Engineering 124 Thermodynamics
  - Stat 1 and Data Science 101

Redesign Strategy

Active and Peer Led Team Learning

Project and Inquiry Based Learning

Online Quality Matters Certification

Project Based, Culturally Responsive

- ## Minigrants:
  - 11 additional Science, Math, and Engineering courses funded Jan. 2024
  - Diversity of evidence-based strategies

CENTER FOR TEACHING & LEARNING
SACRAMENTO STATE

SACRAMENTO STATE
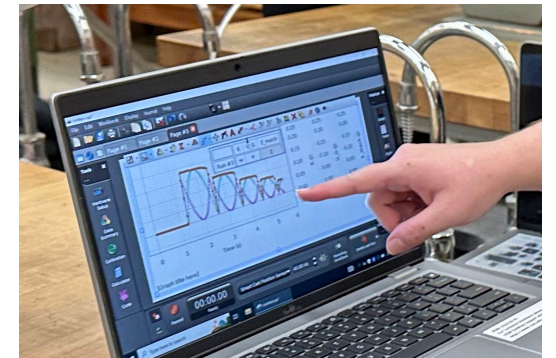
Faculty Learning Communities: Yearlong

Semester 1

- ACUE Microcredential Courses for Effective Teaching
  - Designing Student Centered Courses:
  - Creating Inclusive and Supportive Learning Environments
  - Promoting Active Learning
  - Inspiring Inquiry and Promoting Lifelong Learning
- ESCALA Education
  - Culturally Responsive Teaching for STEM Faculty Teaching Latinx students

Semester 2

- Observe and Analyze
  - small peer group sessions
- Portfolio presentation
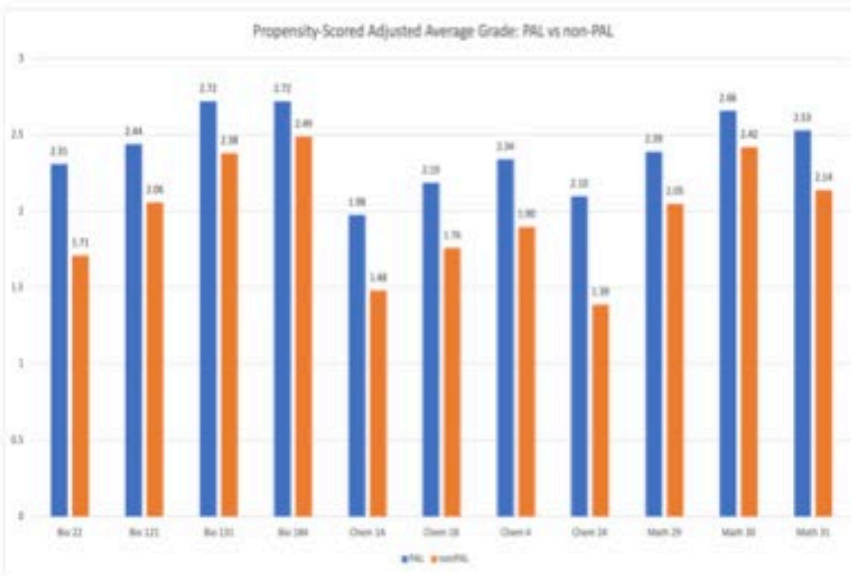 - public Culminating Event

Peer Assisted Learning

PAL Overview — Peer-Assisted Learning: Programs in both STEM Colleges, serving 25 courses across multiple departments

STEM4Equity additions:

- PAL added to Bio 25 & Bio 26, CSC 20 & ENGR 17
- Microinternships related to workplace skills development
- Assessment of workplace skills development

Data from 25,000 students; propensity score matched analysis comparing 174 variables.

PAL provides average of **23% bump** in course grade from course GPA of 1.98 to 2.40

Data published Journal of College Science Teaching (Vol. 52, No. 7, 2023)

I can't solve this problem...........YET
I'm not good at this...................YET
I don't understand this................YET
I don't know how to succeed...YET
This doesn't make sense...........YET

PAL: Together we get to YET

STEM Microinternships

PAL Microinternships: Opportunities for Facilitators to develop their professional skills

Facilitators provided with extra employment for working with their peers to develop trainings for the entire PAL program during Facilitator course (Wed 6-8 pm)

- **Cultural Competency Ambassadors:** developed workshops related to effective engagement with our highly diverse student body.

Recent Example: Students created a Cultural Fair, involving food, dance, textiles, instruments, & stories

- **Leadership Development Team:** developed workshops related to honing interpersonal and professional skills.
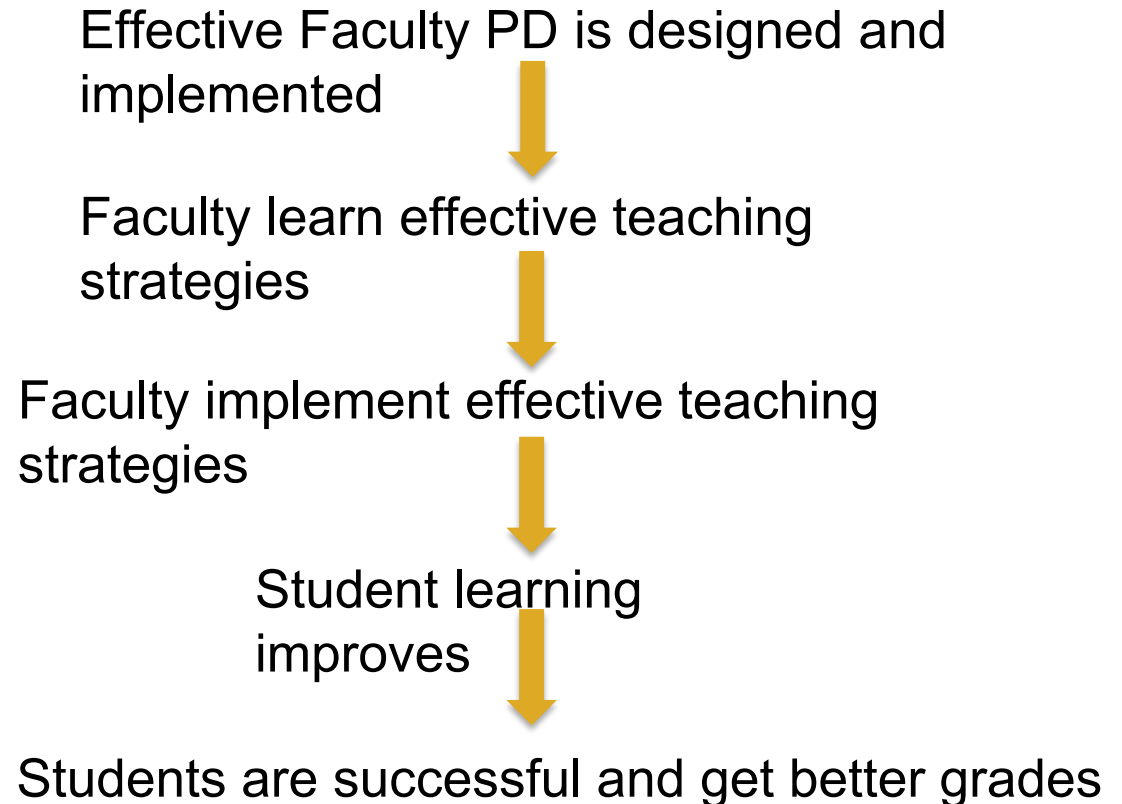
Recent Example: Students led a workshop on How to be an Effective Team Member when there is Conflict

AMENTO
E

Research:
Do Faculty Learning Communities impact student success?

- Assumption: Faculty Professional Development (PD) improves student success

- Theory of Change

- Research gap: Limited investigation into the impact of PD on student outcomes in higher education, especially in STEM fields

Effective Faculty PD is designed and implemented

Faculty learn effective teaching strategies

Faculty implement effective teaching strategies

Student learning improves

Students are successful and get better grades

STEM4Equity Research Question

Can STEM faculty development make
a measurable impact on student course grades?

Faculty Professional Development
Summer of 2020

STEM-specific

- Faculty Learning Community Model
- Engineering, Science, Mathematics faculty only
- 68 participants, 7 small groups
- 7 months (8 modules)
- Synchronous online
- Focused on student engagement and equity
- Evidence-based practice, ex active learning
- Faculty driven and facilitated

CENTER FOR
TEACHING &
LEARNING
SACRAMENTO STATE

SACRAMENTO
STATE

Data Sources, Analytical Sample, Statistical technique

- ## Data Sources
  - Institutional Data (Office of Institutional Research
  - Faculty Professional Development participation data (Center for Teaching and Learning)

- ## Analytical Sample
  - Fall 2019 (pre-period) - Fall 2020 (post-period)
  - STEM Faculty teaching the same course in the pre and post period
  - N faculty = 218   N students course grades = 28,314

- ## Statistical technique
  - Difference-in-Difference regression
  - Parallel trend analysis
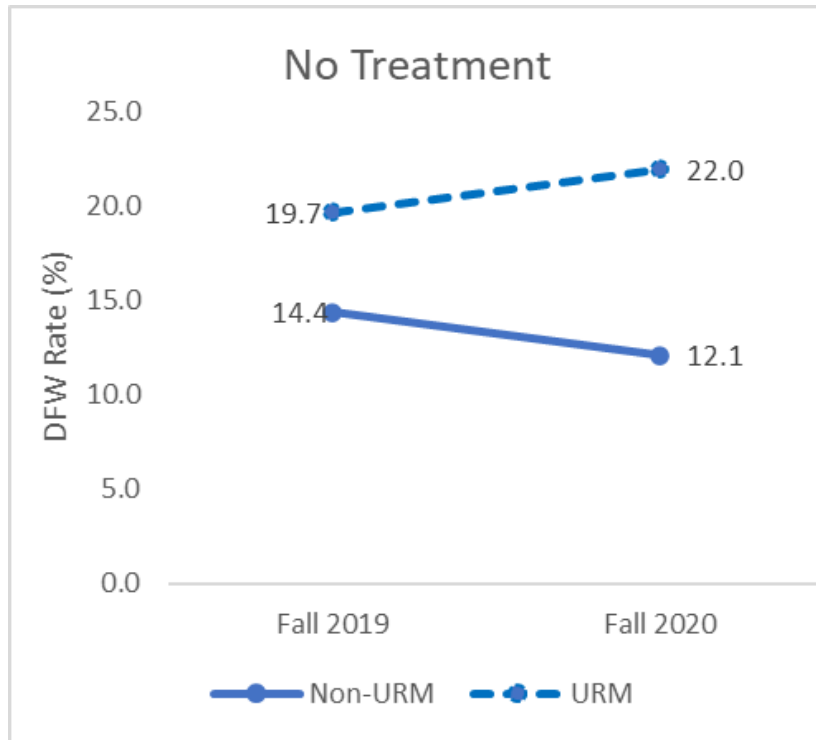 - Instructor and course fixed effects

$$Y_{STEM} = B_0 + B_1(STEM\ PD) + B_2(POST) + B_3(STEM\ PD*POST)$$
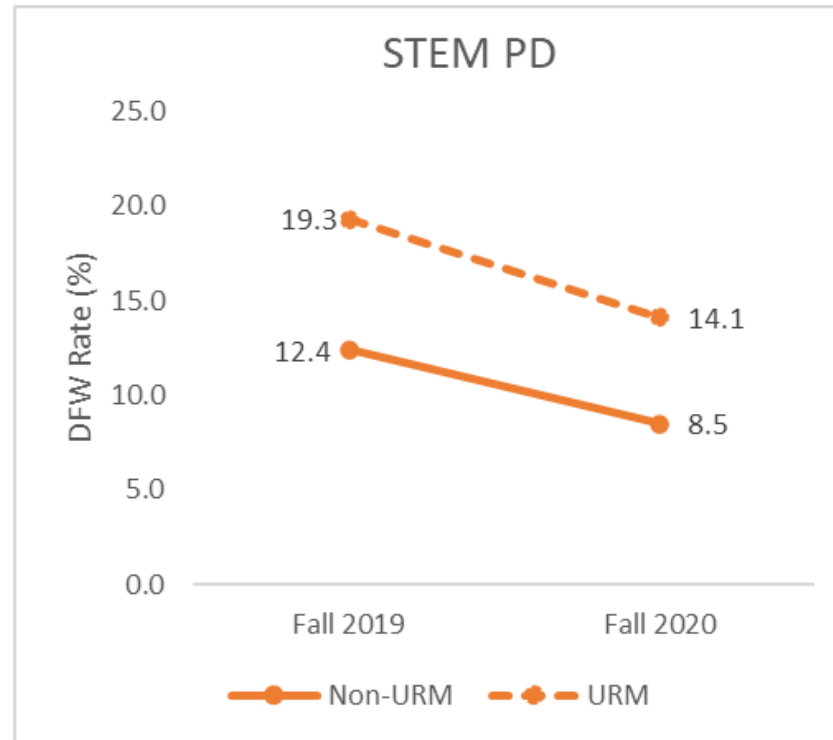
STEM PD Improved Course Grades
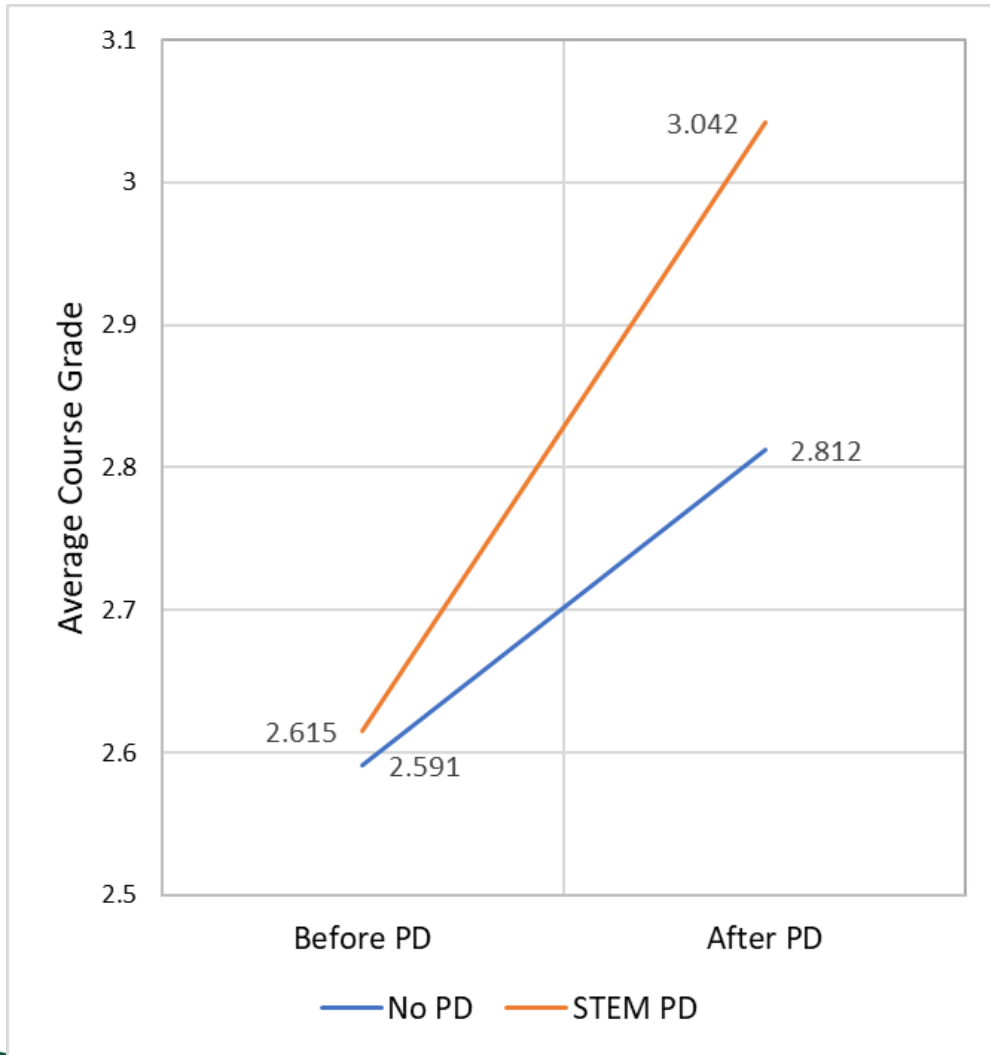
- STEM PD participants' course grades rose significantly more than those of non-participants. 0.2 grade point units

STEM PD Improved Equity Gap in DFW Rates

No Treatment chart — DFW Rate (%): Non-URM 14.4 (Fall 2019) → 12.1 (Fall 2020); URM 19.7 (Fall 2019) → 22.0 (Fall 2020).

STEM PD chart — DFW Rate (%): Non-URM 12.4 (Fall 2019) → 8.5 (Fall 2020); URM 19.3 (Fall 2019) → 14.1 (Fall 2020).

STEM PD participants' equity gap improved.

No treatment participants' equity gap widened.

Equity gap **increased** by 4.6% points

Equity gap **decreased** by 1.3 percentage points

Summary, Lessons Learned, Moving forward

Summary

- Most project components are implemented as planned
- Hiring administrative support and academic advisors is a challenge

Lessons Learned and questions

- Course Redesign should move beyond the core courses to broaden impact on students
- Do Faculty Learning Communities for STEM faculty need to be discipline based?
- Statistical analysis need large N for significant outcomes, > 10,000 student grades?
- Student success research needs a diverse team of STEM Ed specialists (minimum 6 people!)

Acknowledgements

Mary McCarthy Hintz, Professor Emeritus Chemistry

Judi Kusnick, Professor Emeritus, Geology

De-Laine Cyrenne, Professor Emeritus, Psychology

Mary Ann Wong, Institute for Social Research,

Sabrina Solanki, Education Researcher Di Xu, Professor, Education

CENTER FOR TEACHING & LEARNING
SACRAMENTO STATE

SACRAMENTO STATE

Questions?

STEM4Equity contact information

PI Lynn M Tashiro, Tashiro1@csus.edu

PI Jennifer Lundmark, lundmark@csus.edu

The California State University
OFFICE OF THE CHANCELLOR

Speakers Contacts

Stacey Slijepcevic, Department of Education
stacey.slijepcevic@ed.gov

Guillermo Escalante, Cal State San Bernardino
gescalan@csusb.edu

Iqbal Atwal & Harold Stanislaw, CSU Stanislaus
iatwal@csustan.edu; hstanislaw@csustan.edu

Megan Drangstveit, Cal State Fullerton
megand@fullerton.edu

Lynn Tashiro, Sacramento State
tashirol@csus.edu

Next Steps/Closing Remarks

Dr. Frank A. Gomez
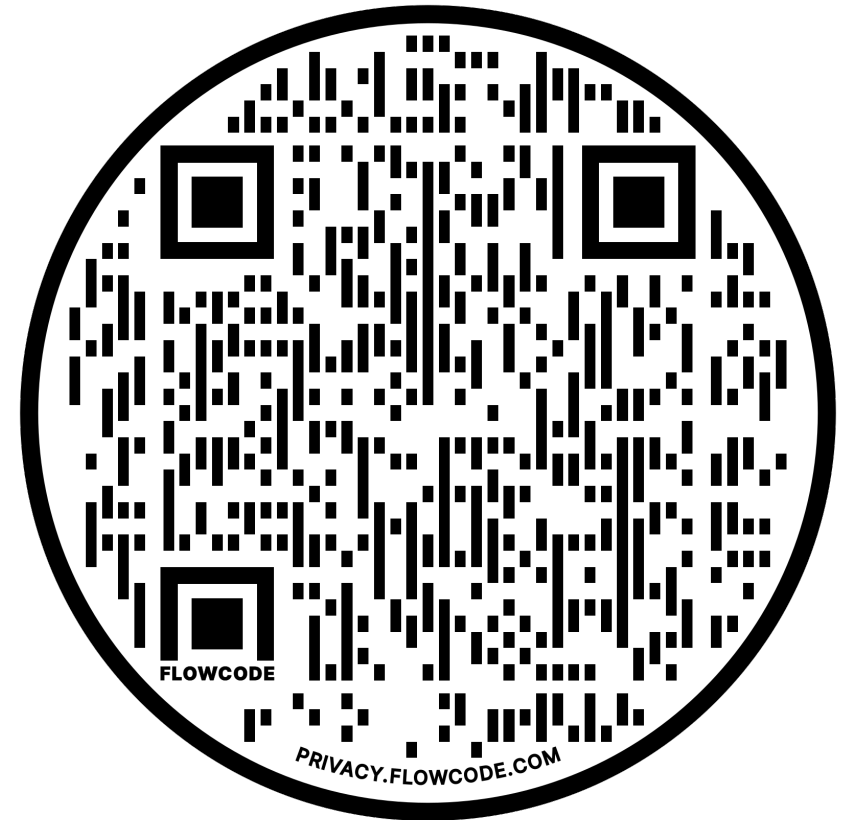Executive Director, STEM-NET
Office of the Chancellor

https://www2.calstate.edu/impact-of-the-csu/research/stem-net

Webcast Feedback Survey

Please take a few moments to tell us about your webcast experience.

Use the QR Scan Code to download it

FLOWCODE

PRIVACY.FLOWCODE.COM

The California State University
OFFICE OF THE CHANCELLOR
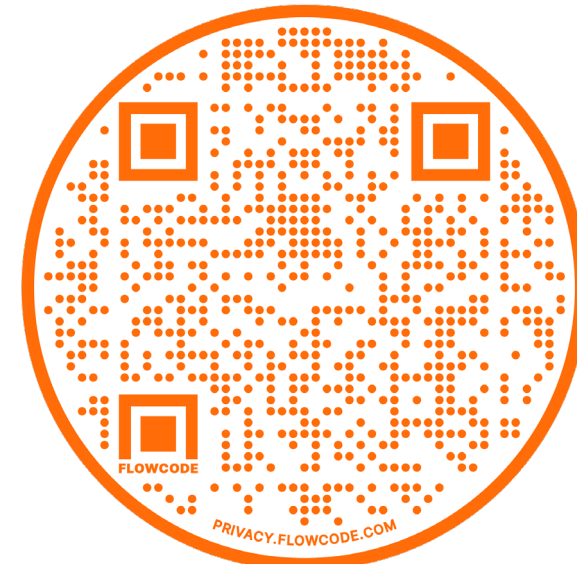
Join our CSU STEM-NET Community listserv
csustemnet@lists.calstate.edu

Begin a Conversation with Colleagues and Join our Private CSU STEM-NET Facebook Group
https://www.facebook.com/groups/2629611737269292

STEM-NET
FACEBOOK GROUP

The California State University
OFFICE OF THE CHANCELLOR

For more information about STEM-NET visit our website:

THANK YOU FOR JOINING US TODAY!

Frank A. Gomez   *CSU Office of the Chancellor*   *fgomez@calstate.edu*